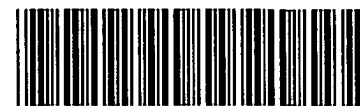


J. Savaya



RAW SEQUENCE LISTING

DATE: 08/02/2002

PATENT APPLICATION: US/09/164,764

TIME: 13:55:19

Input Set : N:\Cr3\RULE60\09164764.raw

Output Set: N:\CRF3\08022002\I164764.raw

SEQUENCE LISTING

3 (1) GENERAL INFORMATION:

6 (i) APPLICANT: SIDRANSKY, DAVID

9 (ii) TITLE OF INVENTION: DETECTION OF HYPERMUTABLE NUCLEIC ACID
10 SEQUENCE IN TISSUE

12 (iii) NUMBER OF SEQUENCES: 40

14 (iv) CORRESPONDENCE ADDRESS:

15 (A) ADDRESSEE: Spensley Horn Jubas & Lubitz

16 (B) STREET: 1880 Century Park East, Suite 500

17 (C) CITY: Los Angeles

18 (D) STATE: CA

19 (E) COUNTRY: USA

20 (F) ZIP: 90067

22 (v) COMPUTER READABLE FORM:

23 (A) MEDIUM TYPE: Diskette

24 (B) COMPUTER: IBM Compatible

25 (C) OPERATING SYSTEM: DOS

26 (D) SOFTWARE: FastSEQ Version 1.1

28 (vi) CURRENT APPLICATION DATA:

C--> 29 (A) APPLICATION NUMBER: US/09/164,764

C--> 30 (B) FILING DATE: 01-Oct-1998

31 (C) CLASSIFICATION:

33 (vii) PRIOR APPLICATION DATA:

35 (A) APPLICATION NUMBER: US/08/854,727

36 (B) FILING DATE: 12-MAY-1997

38 (A) APPLICATION NUMBER: 08/299,477

39 (B) FILING DATE: 31-AUG-1994

41 (A) APPLICATION NUMBER:

42 (B) FILING DATE: August 31, 1994

44 (viii) ATTORNEY/AGENT INFORMATION:

45 (A) NAME: Tumarkin, Ph.D., Lisa A.

46 (B) REGISTRATION NUMBER: P-38,347

47 (C) REFERENCE/DOCKET NUMBER: PD-3485

49 (ix) TELECOMMUNICATION INFORMATION:

50 (A) TELEPHONE: 619-455-5100

51 (B) TELEFAX: 619-455-5110

52 (C) TELEX:

55 (2) INFORMATION FOR SEQ ID NO: 1:

57 (i) SEQUENCE CHARACTERISTICS:

58 (A) LENGTH: 18 base pairs

59 (B) TYPE: nucleic acid

60 (C) STRANDEDNESS: single

61 (D) TOPOLOGY: linear

ENTERED

RAW SEQUENCE LISTING

DATE: 08/02/2002

PATENT APPLICATION: US/09/164,764

TIME: 13:55:19

Input Set : N:\Crif3\RULE60\09164764.raw

Output Set: N:\CRF3\08022002\I164764.raw

```

63      (ii) MOLECULE TYPE: cDNA
64      (iii) HYPOTHETICAL: NO
65      (iv) ANTI-SENSE: NO
W--> 66      (v) FRAGMENT TYPE:
67      (vi) ORIGINAL SOURCE:
69      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
71      CTTGTGTCCC GGCGTCTG                                     18
73 (2) INFORMATION FOR SEQ ID NO: 2:
75      (i) SEQUENCE CHARACTERISTICS:
76          (A) LENGTH: 19 base pairs
77          (B) TYPE: nucleic acid
78          (C) STRANDEDNESS: single
79          (D) TOPOLOGY: linear
81      (ii) MOLECULE TYPE: cDNA
82      (iii) HYPOTHETICAL: NO
83      (iv) ANTI-SENSE: NO
W--> 84      (v) FRAGMENT TYPE:
85      (vi) ORIGINAL SOURCE:
87      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
89      CAGCCCAGCA GGACCAGTA                                     19
91 (2) INFORMATION FOR SEQ ID NO: 3:
93      (i) SEQUENCE CHARACTERISTICS:
94          (A) LENGTH: 21 base pairs
95          (B) TYPE: nucleic acid
96          (C) STRANDEDNESS: single
97          (D) TOPOLOGY: linear
99      (ii) MOLECULE TYPE: cDNA
100     (iii) HYPOTHETICAL: NO
101     (iv) ANTI-SENSE: NO
W--> 102     (v) FRAGMENT TYPE:
103     (vi) ORIGINAL SOURCE:
105     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
107     TGGTAACAGT GGAATACTGA C                                   21
109 (2) INFORMATION FOR SEQ ID NO: 4:
111     (i) SEQUENCE CHARACTERISTICS:
112         (A) LENGTH: 21 base pairs
113         (B) TYPE: nucleic acid
114         (C) STRANDEDNESS: single
115         (D) TOPOLOGY: linear
117     (ii) MOLECULE TYPE: cDNA
118     (iii) HYPOTHETICAL: NO
119     (iv) ANTI-SENSE: NO
W--> 120     (v) FRAGMENT TYPE:
121     (vi) ORIGINAL SOURCE:
123     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
125     ACTGATGCAA AAATCCTCAA C                                   21
127 (2) INFORMATION FOR SEQ ID NO: 5:
129     (i) SEQUENCE CHARACTERISTICS:
130         (A) LENGTH: 26 base pairs

```

RAW SEQUENCE LISTING

DATE: 08/02/2002

PATENT APPLICATION: US/09/164,764

TIME: 13:55:19

Input Set : N:\Crif3\RULE60\09164764.raw

Output Set: N:\CRF3\08022002\I164764.raw

```

131         (B) TYPE: nucleic acid
132         (C) STRANDEDNESS: single
133         (D) TOPOLOGY: linear
135     (ii) MOLECULE TYPE: cDNA
136     (iii) HYPOTHETICAL: NO
137     (iv) ANTI-SENSE: NO
W--> 138     (v) FRAGMENT TYPE:
139     (vi) ORIGINAL SOURCE:
141     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
143     GATGGGCAAA CTGCAGGCCT GGGAAG                                26
145 (2) INFORMATION FOR SEQ ID NO: 6:
147     (i) SEQUENCE CHARACTERISTICS:
148         (A) LENGTH: 27 base pairs
149         (B) TYPE: nucleic acid
150         (C) STRANDEDNESS: single
151         (D) TOPOLOGY: linear
153     (ii) MOLECULE TYPE: cDNA
154     (iii) HYPOTHETICAL: NO
155     (iv) ANTI-SENSE: NO
W--> 156     (v) FRAGMENT TYPE:
157     (vi) ORIGINAL SOURCE:
159     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
161     GCTACAAGGA CCCTTCGAGC CCCGTTC                                27
163 (2) INFORMATION FOR SEQ ID NO: 7:
165     (i) SEQUENCE CHARACTERISTICS:
166         (A) LENGTH: 24 base pairs
167         (B) TYPE: nucleic acid
168         (C) STRANDEDNESS: single
169         (D) TOPOLOGY: linear
171     (ii) MOLECULE TYPE: cDNA
172     (iii) HYPOTHETICAL: NO
173     (iv) ANTI-SENSE: NO
W--> 174     (v) FRAGMENT TYPE:
175     (vi) ORIGINAL SOURCE:
177     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
179     GATGGTGATG TGTTGAGACT GGTG                                24
181 (2) INFORMATION FOR SEQ ID NO: 8:
183     (i) SEQUENCE CHARACTERISTICS:
184         (A) LENGTH: 24 base pairs
185         (B) TYPE: nucleic acid
186         (C) STRANDEDNESS: single
187         (D) TOPOLOGY: linear
189     (ii) MOLECULE TYPE: cDNA
190     (iii) HYPOTHETICAL: NO
191     (iv) ANTI-SENSE: NO
W--> 192     (v) FRAGMENT TYPE:
193     (vi) ORIGINAL SOURCE:
195     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
197     GAGCATTTCC CCACCCACTG GAGG                                24

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RAW SEQUENCE LISTING

DATE: 08/02/2002

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TIME: 13:55:19

Input Set : N:\Crf3\RULE60\09164764.raw

Output Set: N:\CRF3\08022002\I164764.raw

```

199 (2) INFORMATION FOR SEQ ID NO: 9:
201     (i) SEQUENCE CHARACTERISTICS:
202         (A) LENGTH: 20 base pairs
203         (B) TYPE: nucleic acid
204         (C) STRANDEDNESS: single
205         (D) TOPOLOGY: linear
207     (ii) MOLECULE TYPE: cDNA
208     (iii) HYPOTHETICAL: NO
209     (iv) ANTI-SENSE: NO
W--> 210     (v) FRAGMENT TYPE:
211     (vi) ORIGINAL SOURCE:
213     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
215     GTTCTGGATC ACTTCGCGGA                                     20
217 (2) INFORMATION FOR SEQ ID NO: 10:
219     (i) SEQUENCE CHARACTERISTICS:
220         (A) LENGTH: 20 base pairs
221         (B) TYPE: nucleic acid
222         (C) STRANDEDNESS: single
223         (D) TOPOLOGY: linear
225     (ii) MOLECULE TYPE: cDNA
226     (iii) HYPOTHETICAL: NO
227     (iv) ANTI-SENSE: NO
W--> 228     (v) FRAGMENT TYPE:
229     (vi) ORIGINAL SOURCE:
231     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
233     TGAGGATGGT TCTCCCAAG                                     20
235 (2) INFORMATION FOR SEQ ID NO: 11:
237     (i) SEQUENCE CHARACTERISTICS:
238         (A) LENGTH: 20 base pairs
239         (B) TYPE: nucleic acid
240         (C) STRANDEDNESS: single
241         (D) TOPOLOGY: linear
243     (ii) MOLECULE TYPE: cDNA
244     (iii) HYPOTHETICAL: NO
245     (iv) ANTI-SENSE: NO
W--> 246     (v) FRAGMENT TYPE:
247     (vi) ORIGINAL SOURCE:
249     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
251     AGTGGTGAAT TAGGGGTGTT                                     20
253 (2) INFORMATION FOR SEQ ID NO: 12:
255     (i) SEQUENCE CHARACTERISTICS:
256         (A) LENGTH: 20 base pairs
257         (B) TYPE: nucleic acid
258         (C) STRANDEDNESS: single
259         (D) TOPOLOGY: linear
261     (ii) MOLECULE TYPE: cDNA
262     (iii) HYPOTHETICAL: NO
263     (iv) ANTI-SENSE: NO
W--> 264     (v) FRAGMENT TYPE:

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/164,764

DATE: 08/02/2002

TIME: 13:55:19

Input Set : N:\Crif3\RULE60\09164764.raw

Output Set: N:\CRF3\08022002\I164764.raw

```

265      (vi) ORIGINAL SOURCE:
267      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
269      CTGCCATCTT GTGGAATCAT
271 (2) INFORMATION FOR SEQ ID NO: 13:
273      (i) SEQUENCE CHARACTERISTICS:
274          (A) LENGTH: 21 base pairs
275          (B) TYPE: nucleic acid
276          (C) STRANDEDNESS: single
277          (D) TOPOLOGY: linear
279      (ii) MOLECULE TYPE: cDNA
280      (iii) HYPOTHETICAL: NO
281      (iv) ANTI-SENSE: NO
W--> 282      (v) FRAGMENT TYPE:
283      (vi) ORIGINAL SOURCE:
285      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
287      CTGTGAGTTC AAAACCTATG G
289 (2) INFORMATION FOR SEQ ID NO: 14:
291      (i) SEQUENCE CHARACTERISTICS:
292          (A) LENGTH: 20 base pairs
293          (B) TYPE: nucleic acid
294          (C) STRANDEDNESS: single
295          (D) TOPOLOGY: linear
297      (ii) MOLECULE TYPE: cDNA
298      (iii) HYPOTHETICAL: NO
299      (iv) ANTI-SENSE: NO
W--> 300      (v) FRAGMENT TYPE:
301      (vi) ORIGINAL SOURCE:
303      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:
305      GTGTCAGAGG ATCTGAGAAG
307 (2) INFORMATION FOR SEQ ID NO: 15:
309      (i) SEQUENCE CHARACTERISTICS:
310          (A) LENGTH: 24 base pairs
311          (B) TYPE: nucleic acid
312          (C) STRANDEDNESS: single
313          (D) TOPOLOGY: linear
315      (ii) MOLECULE TYPE: cDNA
316      (iii) HYPOTHETICAL: NO
317      (iv) ANTI-SENSE: NO
W--> 318      (v) FRAGMENT TYPE:
319      (vi) ORIGINAL SOURCE:
321      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:
323      GCACGCTCTG GAACAGATTC TGGA
325 (2) INFORMATION FOR SEQ ID NO: 16:
327      (i) SEQUENCE CHARACTERISTICS:
328          (A) LENGTH: 24 base pairs
329          (B) TYPE: nucleic acid
330          (C) STRANDEDNESS: single
331          (D) TOPOLOGY: linear
333      (ii) MOLECULE TYPE: cDNA

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VERIFICATION SUMMARY

PATENT APPLICATION: US/09/164,764

DATE: 08/02/2002

TIME: 13:55:20

Input Set : N:\Crf3\RULE60\09164764.raw

Output Set: N:\CRF3\08022002\I164764.raw

L:29 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:30 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:66 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=1
L:84 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=2
L:102 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=3
L:120 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=4
L:138 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=5
L:156 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=6
L:174 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=7
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L:210 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=9
L:228 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=10
L:246 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=11
L:264 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=12
L:282 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=13
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L:318 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=15
L:336 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=16
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L:372 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=18
L:390 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=19
L:408 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=20
L:426 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=21
L:444 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=22
L:462 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=23
L:480 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=24
L:498 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=25
L:516 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=26
L:534 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=27
L:552 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=28
L:570 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=29
L:588 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=30
L:606 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=31
L:624 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=32
L:642 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=33
L:660 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=34
L:678 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=35
L:696 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=36
L:714 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=37
L:732 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=38
L:750 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=39
L:768 M:246 W: Invalid value of Alpha Sequence Header Field, [FRAGMENT TYPE:], SeqNo=40